

SEQUENCE LISTING

<110> Bristol-Myers Squibb Company

<120> A NOVEL HUMAN LEUCINE-RICH REPEAT CONTAINING PROTEIN EXPRESSED
PREDOMINATELY IN SMALL INTESTINE, HLRS11

<130> D0066NP

<150> US 60/257,774

<151> 2000-12-22

<160> 40

<170> PatentIn version 3.0

<210> 1

<211> 2689

<212> DNA

<213> homo sapiens

<220>

<221> CDS

<222> (75) .. (1949)

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Met Leu Ala Gln Pro Gln Arg Leu Leu Phe Ile Leu
1 5 10

gac ggc gcg gac gag ctg ccg gcg ctg ggg ggc ccc gag gcc gcg ccc 158
Asp Gly Ala Asp Glu Leu Pro Ala Leu Gly Gly Pro Glu Ala Ala Pro
15 20 25

tgc aca gac ccc ttc gag gcg gcg agc ggc gcg cgg gtg cta gcc ggg 200
Cys Thr Asp Pro Phe Glu Ala Ala Ser Gly Ala Arg Val Leu Gly Gly
30 35 40

ctg ctg agt aag gcg ctg ctg ccc aag gcc ctc ctg ctg gtc acc aag 254
Leu Leu Ser Lys Ala Leu Leu Pro Thr Ala Leu Leu Leu Val Thr Thr
45 50 55 60

cgc gcc gcc gcc ccc cgg agc ctg cag gcc cgc ctg tgt tcc ccg cag 302
Arg Ala Ala Ala Pro Gly Arg Leu Gln Gly Arg Leu Cys Ser Pro Gln
65 70 75

tgc gcc gag gtc cgc gcc ttc ttc gag aag aag gcc aag aag tat ttc 350
Cys Ala Glu Val Arg Gly Phe Ser Asp Lys Asp Lys Lys Lys Tyr Phe
80 85 90

tac aag ttc ttc cgc gat gag aag aag gcc gag cgc gcc tac cgc ttc 398
Tyr Lys Phe Phe Arg Asp Glu Arg Arg Ala Glu Arg Ala Tyr Arg Phe
95 100 105

gta aag aag aag gag aag aag cta ttc gta ctg ttc ttc cta cta ttc arg 440
Val Lys Phe Ala Glu Thr Leu Phe Ala Leu Cys Phe Val Pro Phe Val
110 115 120

atg tgc atc atc ttc aag aag cta cta cta cta cta cta cta cta cta 494

Cys Trp Ile Val Cys Thr Val Leu Arg Gln Gln Leu Glu Leu Gly Arg	
125 130 135 140	
gac ctg tcg cgc acg tcc aag acc acc acg tca gtg tac ctg ctt ttc	542
Asp Leu Ser Arg Thr Ser Lys Thr Thr Thr Ser Val Tyr Leu Leu Phe	
145 150 155	
atc acc agc gtt ctg acc tcg gct ccg gta gcc gac ggg ccc cgg ttg	590
Ile Thr Ser Val Leu Ser Ser Ala Pro Val Ala Asp Gly Pro Arg Leu	
160 165 170	
cag ggc gac ctg cgc aat ctg tgc cgc ctg gcc cgc gag ggc gtc ctc	638
Gln Gly Asp Leu Arg Asn Leu Cys Arg Leu Ala Arg Glu Gly Val Leu	
175 180 185	
gga cgc agg ggg cag ttt gcc gag aag gaa ctg gag caa ctg gag ctt	686
Gly Arg Arg Ala Gln Phe Ala Glu Lys Glu Leu Glu Gln Leu Glu Leu	
190 195 200	
cgt ggc tcc aaa gtg cag acg ctg ttt ctc agc aaa aag gag ctg ccg	734
Arg Gly Ser Lys Val Gln Thr Leu Phe Leu Ser Lys Lys Glu Leu Pro	
205 210 215 220	
ggc gtg ctg gag aca gag gtc acc tac cag ttc atc gac cag agc ttc	782
Gly Val Leu Glu Thr Glu Val Thr Tyr Gln Phe Ile Asp Gln Ser Phe	
225 230 235	
cag gac ttc ctc gag gca ctg tcc tac ctg ctg gag gac gcc ggg gtg	830
Gln Glu Phe Leu Ala Ala Leu Ser Tyr Leu Leu Glu Asp Gly Gly Val	
240 245 250	
ccc agg acc ggg gct ggc ggc gtr ggg aca ctc ctg cgt ggg gac gcc	878
Pro Arg Thr Ala Ala Gly Gly Val Gly Thr Leu Leu Arg Gly Asp Ala	
255 260 265	
cag ccg cac agc cac ttg gtg ctc acc acg cgc ttc ctc ttc gga ctg	926
Gln Pro His Ser His Leu Val Leu Thr Thr Arg Phe Leu Phe Gly Leu	
270 275 280	
ctg agc ggc gag cgg atg cgc gac atc gag cgc cac ttc gcc tgc atg	974
Leu Ser Ala Glu Arg Met Arg Asp Ile Glu Arg His Phe Gly Cys Met	
285 290 295 300	
gtt tca gag cgt gtg aag cag gag gcc cta cgc tgg gta cag gga cag	1022
Val Ser Glu Arg Val Lys Gln Glu Ala Leu Arg Trp Val Gln Gly Gln	
305 310 315	
gga cag agt tgc ccc gga gtg gca cca gag gtg acc gag ggg gcc aaa	1070
Gly Gln Gly Cys Pro Gly Val Ala Pro Glu Val Thr Glu Gly Ala Lys	
320 325 330	
ggg ctc gag gac acc gaa gag cca gag gag gag gag gaa gag gag	1118
Gly Leu Glu Asp Thr Glu Glu Ile Glu Glu Glu Glu Glu Gly Glu Glu	
335 340 345	
ccc aat tca cca cta ctt ttg ctg tac tgc ctg tac gaa acc cag aat	1166
Pro Asn Tyr Pro Leu Glu Leu Leu Tyr Cys Leu Tyr Glu Thr Gln Glu	
350 355 360	
aac gaa ttt atg gca gaa gaa gaa gaa gaa gaa gaa gaa gaa gaa	1214
Asp Ala Ile Val Ala Gln Ala Leu Tyr Asn Phe Pro Gln Leu Ala Leu	

365	370	375	380	
cag cga gtg cgc ttc tgc cgc atg gac gtg gct gtt ctg agc tac tgc				1262
Gln Arg Val Arg Phe Cys Arg Met Asp Val Ala Val Leu Ser Tyr Cys				
385		390	395	
gtg agg tgc tgc cct gct gga cag gca ctg cgg ctg acc agc tgc aga				1310
Val Arg Cys Cys Pro Ala Gly Gln Ala Leu Arg Leu Ile Ser Cys Arg				
400	405		410	
ctg gct gct gag cag gag aag aag aag aag agc ctg ggg aag cgg ctg				1351
Leu Val Ala Ala Gln Glu Lys Lys Lys Lys Ser Leu Gly Lys Arg Leu				
415	420		425	
cag gcc agc ctg ggt ggc ggc att tct cca gcc acc aga aag cca ctg				1406
Gln Ala Ser Leu Gly Gly Gly Ser Ser Gln Gly Thr Thr Lys Gln Leu				
430	435		440	
cca gcc tcc ctt ctt cat cca ctg ttt cag gca atg att gac cca ctg				1451
Pro Ala Ser Leu Leu His Pro Leu Phe Gln Ala Met Thr Asp Pro Leu				
445	450	455	460	
tgc cat ctg agc agc ctg acc ctg tcc ctg tgc aaa ctg cct gat gag				1501
Cys His Leu Ser Ser Leu Thr Leu Ser His Cys Lys Leu Pro Asp Ala				
465	470		475	
gtc tgc cga gac ctt tct gag gtc ctg aag gca gtc ccc gca ctg acc				1550
Val Cys Arg Asp Leu Ser Gln Ala Leu Arg Ala Ala Pro Ala Leu Thr				
480	485		490	
gag ctg gcc ctg ctg cca aac aag ctg att gag gag ggc ctg cgt atg				1591
Glu Leu Gly Leu Leu His Asn Arg Leu Ser Glu Ala Gly Leu Arg Met				
495	500		505	
ctg agt gag gcc cta gcc tgg cgg cag ttc agg ggc cag acc gtc agg				1646
Leu Ser Gln Gly Leu Ala Trp Pro Gln Cys Arg Val Gln Thr Val Arg				
510	515		520	
gta cag ctg cct gac ccc cag cca ggg ctg cag tac ctg gtc gct atg				1694
Val Gln Leu Pro Asp Pro Gln Arg Gly Leu Gln Tyr Leu Val Gly Met				
525	530	535	540	
ctt cgg cag agc ccc gcc ctg acc acc ctg gat ctg acc gcc ttc cca				1742
Leu Arg Gln Ser Pro Ala Leu Thr Thr Leu Asp Leu Ser Gly Cys Gln				
545	550		555	
ctg ccc gcc ccc atg gtg acc tac ctg tgc gca gtc cng cag cac cag				1790
Leu Pro Ala Pro Met Val Thr Tyr Leu Cys Ala Val Leu Gln His Gln				
560	565		570	
gga tgc ggc ctg cag acc ctg agt ctg gcc tct gtg gag ctg agc gag				1838
Gly Cys Gly Leu Gln Thr Leu Ser Leu Ala Ser Val Glu Leu Ser Glu				
575	580		585	
cad tca cta cag gag ctt cag gct gtg aac aga gca aag cgg gat ctg				1886
Gln Ser Leu Gln Glu Leu Gln Ala Val Lys Arg Ala Lys Pro Asp Leu				
590	595	600		
gtc atc aca cac cca gcc ctg gac gcc cac cca cca cct ccc aag gaa				1934
Val Ile Thr His Pro Ala Leu Asp Gly His Pro Gln Pro Pro Lys Glu				
605	610	615	620	

ctc atc tgc acc ttc tgaggtcttg gtggccagag caggggtggaa gacccctagtc 1989
 Leu Ile Ser Thr Phe
 625

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 <212> PRT
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Ile Gln Ala Ala Ser Gly Ala Arg Val Leu Gly Gly Leu Leu Ser Lys
 35 40 45

Ala Leu Leu Pro Thr Ala Leu Leu Leu Val Thr Thr Arg Ala Ala Ala
 50 55 60

Pro Gly Arg Leu Gln Gly Arg Leu Cys Ser Pro Gln Cys Ala Glu Val
 65 70 75 80

Arg Gly Phe Ser Asp Lys Asp Lys Lys Lys Tyr Phe Tyr Lys Phe Phe
 85 90 95 100

Arg Asp Glu Arg Arg Ala Glu Arg Ala Tyr Arg Phe Val Lys Glu Asn
 100 105 110

Glu Thr Leu Phe Ala Leu Cys Phe Val Pro Phe Val Cys Trp Ile Val
 115 120 125

Cys Thr Val Leu Arg Gln Gln Leu Glu Leu Gly Arg Asp Leu Ser Arg
 130 135 140

Thr Ser Lys Thr Thr Thr Ser Val Tyr Leu Leu Phe Ile Thr Ser Val
 145 150 155 160

Leu Ser Ser Ala Pro Val Ala Asp Gly Pro Arg Leu Gln Gly Asp Leu
 165 170 175

Arg Asn Leu Cys Arg Leu Ala Arg Glu Gly Val Leu Gly Arg Arg Ala
 180 185 190

Gln Ile Ala Glu Lys Glu Leu Glu Gln Leu Glu Leu Arg Gly Ser Lys
 195 200 205

Val Gln Thr Leu Phe Leu Ser Lys Lys Glu Leu Pro Gly Val Leu Glu
 210 215 220

Thr Glu Val Thr Tyr Gln Phe Ile Asp Gln Ser Phe Gln Glu Phe Leu
 225 230 235 240

Ala Ala Leu Ser Tyr Leu Leu Glu Asp Gly Gly Val Pro Arg Thr Ala
 245 250 255

Ala Gly Gly Val Gly Thr Leu Leu Arg Gly Asp Ala Gln Pro His Ser
 260 265 270

His Leu Val Leu Thr Thr Arg Phe Leu Phe Gly Leu Leu Ser Ala Glu
 275 280 285

Arg Met Arg Asp Ile Glu Arg His Phe Gly Cys Met Val Ser Glu Arg
 285 290 300

Val Lys Gln Gln Ala Leu Arg Trp Val Gln Gly Gln Gly Gln Gly Cys
 305 310 315 320

Pro Gly Val Ala Pro Gln Val Thr Gln Gly Ala Lys Gly Leu His Asp
 325 330 335 340

Thr Val Ala Pro Ala Gln Gln Gln Gln Gly Gln Gln Pro Asn Tyr Pro

340

345

350

Leu Glu Leu Leu Tyr Cys Leu Tyr Glu Thr Gln Glu Asp Ala Phe Val
 355 360 365

Arg Gln Ala Leu Cys Arg Phe Pro Glu Leu Ala Leu Gln Arg Val Arg
 370 375 380

Phe Cys Arg Met Asp Val Ala Val Leu Ser Tyr Cys Val Arg Cys Cys
 385 390 395 400

Pro Ala Gly Gln Ala Leu Arg Leu Ile Ser Cys Arg Leu Val Ala Ala
 405 410 415

Gln Glu Lys Lys Lys Lys Ser Leu Gly Lys Arg Leu Gln Ala Ser Leu
 420 425 430

Gly Gly Gly Ser Ser Gln Gly Thr Thr Lys Gln Leu Pro Ala Ser Leu
 435 440 445

Leu His Pro Leu Ile Gln Ala Met Thr Asp Pro Leu Cys His Leu Ser
 450 455 460

Ser Leu Thr Leu Ser His Cys Lys Leu Pro Asp Ala Val Cys Arg Asp
 465 470 475 480

Leu Ser Glu Ala Leu Arg Ala Ala Pro Ala Leu Thr Glu Leu Gly Leu
 485 490 495

Leu His Asn Arg Leu Ser Glu Ala Gly Leu Arg Met Leu Ser Glu Gly
 500 505 510

Leu Ala Trp Pro Gln Cys Arg Val Gln Thr Val Arg Val Gln Leu Pro
 515 520 525

Asp Pro Gln Arg Gly Leu Gln Tyr Leu Val Gly Met Leu Arg Gln Ser
 530 535 540

Pro Ala Leu Thr Thr Leu Asp Leu Ser Gly Cys Gln Leu Pro Ala Pro
 545 550 555 560

Met Val Thr Tyr Leu Cys Ala Val Leu Gln His Gln Gly Cys Gly Leu
 565 570 575

Gln Thr Leu Ser Leu Ala Pro Val Gln Leu Ser Gln Gln Ser Leu Gln
 580 585 590

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Pro Ala Leu Asp Gly His Pro Gln Pro Pro Lys Glu Leu Ile Ser Thr
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Phe
625

<210> 3
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<213> homo sapiens

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His Ser Arg Ser Ser Ser Gly Glu Thr Pro Ala Gln Pro Glu Lys Thr
35 40 45

Ser Gly Met Glu Val Ala Ser Tyr Leu Val Ala Gln Tyr Gly Glu Gln
50 55 60

Arg Ala Trp Asp Leu Ala Leu His Thr Trp Glu Gln Met Gly Leu Arg
65 70 75 80

Ser Leu Cys Ala Gln Ala Gln Glu Gly Ala Gly His Ser Pro Ser Phe
85 90 95

Pro Tyr Ser Pro Ser Glu Pro His Leu Gly Ser Pro Ser Gln Pro Thr
100 105 110

Ser Thr Ala Val Leu Met Pro Trp Ile His Glu Leu Pro Ala Gly Cys
115 120 125

Thr Gln Gly Ser Glu Arg Arg Val Leu Arg Gln Leu Pro Asp Thr Ser
130 135 140

Gly Arg Arg Trp Arg Glu Ile Ser Ala Ser His Leu Tyr Gln Ala Leu
145 150 155 160

Pro Ser Ser Pro Asp His Glu Ser Pro Ser Gln Glu Ser Pro Asn Ala
165 170 175

Pro Thr Ser Thr Ala Val Leu Gly Ser Trp Gly Ser Pro Pro Gln Pro
180 185 190

Ser Leu Ala Pro Arg Glu Gln Glu Ala Pro Gly Thr Gln Trp Pro Leu
195 200 205

Asp Gln Thr Ser Gly Ile Tyr Tyr Thr Glu Ile Arg Glu Asn Glu Arg

210	215	220
Glu Lys Ser Glu Lys Gly Arg Pro Pro Trp Ala Ala Val Val Gly Thr		
225	230	235 240
Pro Pro Gln Ala His Ser Ser Leu Gln Pro His His His Pro Trp Glu		
	245	250 255
Pro Ser Val Arg Glu Ser Leu Cys Ser Thr Trp Pro Trp Lys Asn Glu		
	260	265 270
Asp Phe Asn Gln Lys Phe Thr Gln Leu Leu Leu Leu Gln Arg Pro His		
	275	280 285
Pro Arg Ser Gln Asp Pro Leu Val Lys Arg Ser Trp Pro Asp Tyr Val		
	290	295 300
Glu Glu Asn Arg Gly His Leu Ile Glu Ile Arg Asp Leu Phe Gly Pro		
	305	310 315 320
Gly Leu Asp Thr Gln Glu Pro Arg Ile Val Ile Leu Gln Gly Ala Ala		
	325	330 335
Gly Ile Gly Lys Ser Thr Leu Ala Arg Gln Val Lys Glu Ala Trp Gly		
	340	345 350
Arg Gly Gln Leu Tyr Gly Asp Arg Phe Gln His Val Ile Tyr Ile Ser		
	355	360 365
Cys Arg Glu Leu Ala Gln Ser Lys Val Val Ser Leu Ala Glu Leu Ile		
	370	375 380
Gly Lys Asp Gly Thr Ala Thr Pro Ala Pro Ile Arg Gln Ile Leu Ser		
	385	390 395 400
Arg Pro Glu Arg Leu Leu Phe Ile Leu Asp Gly Val Asp Glu Pro Gly		
	405	410 415
Trp Val Leu Gln Glu Pro Ser Ser Glu Leu Cys Leu His Trp Ser Gln		
	420	425 430
Pro Gln Pro Ala Asp Ala Leu Leu Gly Ser Leu Leu Gly Lys Thr Ile		
	435	440 445
Leu Pro Glu Ala Ser Phe Leu Ile Thr Ala Arg Thr Thr Ala Leu Gln		
	450	455 460
Asp Leu Ile Pro Ser Leu Gln Gln Ala Arg Trp Val Glu Val Leu Gly		
	465	470 475 480
Phe Ser Glu Ser Ser Arg Lys Glu Tyr Phe Tyr Arg Tyr Phe Thr Asp		
	485	490 495
Glu Arg Gln Ala Ile Arg Ala Ile Arg Leu Val Lys Ser Asn Lys Glu		
	500	505 510
Leu Trp Ala Leu Cys Leu Val Phe Trp Val Ser Trp Leu Ala Cys Thr		
	515	520 525
Cys Leu Met Gln Gln Met Lys Arg Lys Gln Lys Leu Thr Leu Thr Ser		
	530	535 540

Lys Thr Thr Thr Thr Leu Cys Leu His Tyr Leu Ala Gln Ala Leu Gln
 515 550 565
 Ala Gln Pro Leu Gly Pro Gln Leu Arg Asp Leu Cys Ser Leu Ala Ala
 565 570 575
 Glu Gly Ile Trp Gln Lys Lys Thr Leu Phe Ser Pro Asp Asp Leu Arg
 580 585 590
 Lys His Gly Leu Asp Gly Ala Ile Ile Ser Thr Phe Leu Lys Met Gly
 595 600 605
 Ile Leu Gln Glu His Pro Ile Pro Leu Ser Tyr Ser Phe Ile His Leu
 610 615 620
 Cys Phe Gln Glu Phe Phe Ala Ala Met Ser Tyr Val Leu Glu Asp Glu
 625 630 635 640
 Lys Gly Arg Gly Lys His Ser Asn Cys Ile Ile Asp Leu Glu Lys Thr
 645 650 655
 Leu Glu Ala Tyr Gly Ile His Gly Leu Phe Gly Ala Ser Thr Thr Arg
 660 665 670
 Phe Leu Leu Gly Leu Leu Ser Asp Glu Gly Glu Arg Glu Met Glu Asn
 675 680 685
 Ile Phe His Cys Arg Leu Ser Gln Gly Arg Asn Leu Met Gln Trp Val
 690 695 700
 Pro Ser Leu Gln Leu Leu Leu Gln Pro His Ser Leu Glu Ser Leu His
 705 710 715 720
 Cys Leu Tyr Glu Thr Arg Asn Lys Thr Phe Leu Thr Gln Val Met Ala
 725 730 735
 His Phe Glu Glu Met Gly Met Cys Val Glu Thr Asp Met Glu Leu Leu
 740 745 750
 Val Cys Thr Phe Cys Ile Lys Phe Ser Arg His Val Lys Lys Leu Gln
 755 760 765
 Leu Ile Glu Gly Arg Gln His Arg Ser Thr Trp Ser Pro Ser Met Val
 770 775 780
 Val Leu Phe Arg Trp Val Pro Val Thr Asp Ala Tyr Trp Gln Ile Leu
 785 790 795 800
 Phe Ser Val Leu Lys Val Thr Arg Asn Leu Lys Glu Leu Asp Leu Ser
 805 810 815
 Gly Asn Ser Leu Ser His Ser Ala Val Lys Ser Leu Cys Lys Thr Leu
 820 825 830
 Arg Arg Pro Arg Cys Leu Leu Glu Thr Leu Arg Leu Ala Gly Cys Gly
 835 840 845
 Leu Thr Ala Glu Asp Cys Lys Asp Leu Ala Phe Gly Leu Arg Ala Asn
 850 855 860

Gln Thr Leu Thr Glu Leu Asp Leu Ser Phe Asn Val Leu Met Asp Ala
 865 870 875 880
 Gly Ala Lys His Leu Cys Gln Arg Leu Arg Gln Pro Ser Cys Lys Leu
 885 890 895
 Gln Arg Leu Gln Leu Val Ser Cys Gly Leu Thr Ser Asp Cys Cys Gln
 900 905 910
 Asp Leu Ala Ser Val Leu Ser Ala Ser Pro Ser Leu Lys Glu Leu Asp
 915 920 925
 Leu Gln Gln Asn Asn Leu Asp Asp Val Gly Val Arg Leu Leu Cys Glu
 930 935 940
 Gly Leu Arg His Pro Ala Cys Lys Leu Ile Arg Leu Gly Leu Asp Gln
 945 950 955 960
 Thr Thr Leu Ser Asp Glu Met Arg Gln Gln Leu Arg Ala Leu Gln Gln
 965 970 975
 Glu Lys Pro Gln Leu Leu Ile Phe Ser Arg Arg Lys Pro Ser Val Met
 980 985 990
 Thr Pro Ile Glu Gly Leu Asp Thr Gly Glu Met Ser Asn Ser Thr Ser
 995 1000 1005
 Ser Leu Lys Arg Gln Arg Leu Gly Ser Glu Arg Ala Ala Ser His
 1010 1015 1020
 Val Ala Gln Ala Asn Leu Lys Leu Leu Asp Val Ser Lys Ile Phe
 1025 1030 1035
 Pro Ile Ala Glu Ile Ala Glu Glu Ser Ser Pro Glu Val Val Pro
 1040 1045 1050
 Val Glu Leu Leu Cys Val Pro Ser Pro Ala Ser Gln Gly Asp Leu
 1055 1060 1065
 His Thr Lys Pro Leu Gly Thr Asp Asp Asp Phe Trp Gly Pro Thr
 1070 1075 1080
 Gly Pro Val Ala Thr Glu Val Val Asp Lys Glu Lys Asn Leu Tyr
 1085 1090 1095
 Arg Val His Phe Pro Val Ala Gly Ser Tyr Arg Trp Pro Asn Thr
 1100 1105 1110
 Gly Leu Cys Phe Val Val Arg Glu Ala Val Thr Val Glu Ile Glu
 1115 1120 1125
 Ile Cys Val Trp Arg Gln Phe Leu Gly Glu Ile Asn Pro Gln His
 1130 1135 1140
 Ser Trp Met Val Ala Gly Leu Leu Leu Asp Ile Lys Ala Gln Pro
 1145 1150 1155
 Gly Ala Val Glu Ala Val His Leu Pro His Phe Val Ala Leu Gln
 1160 1165 1170
 Gly Gly His Val Arg Thr Ser Leu Ile Gln Val Ala His Ile Tyr

1175	1180	1185
Glu Glu Gly Met Leu Leu	Glu Lys Pro Ala Arg	Val Glu Leu His
1190	1195	1200
His Ile Val Leu Glu Asn	Pro Ser Phe Ser Pro	Leu Gly Val Leu
1205	1210	1215
Leu Lys Met Ile His Asn	Ala Leu Arg Phe Ile	Pro Val Thr Ser
1220	1225	1230
Val Val Leu Leu Tyr His	Arg Leu His Pro Glu	Glu Val Thr Phe
1235	1240	1245
His Leu Tyr Leu Ile Pro	Ser Asp Cys Ser Ile	Arg Lys Glu Leu
1250	1255	1260
Glu Leu Cys Tyr Arg Ser	Pro Gly Glu Asp Gln	Leu Phe Ser Glu
1265	1270	1275
Phe Tyr Val Gly His Leu	Gly Ser Gly Ile Arg	Leu Gln Val Lys
1280	1285	1290
Asp Lys Lys Asp Glu Thr	Leu Val Trp Glu Ala	Leu Val Lys Pro
1295	1300	1305
Gly Asp Leu Met Pro Ala	Thr Thr Leu Ile Pro	Pro Ala Cys Ile
1310	1315	1320
Ala Val Pro Ser Pro Leu	Asp Ala Pro Gln Leu	Leu His Phe Val
1325	1330	1335
Asp Gln Tyr Arg Glu Gln	Leu Ile Ala Arg Val	Thr Ser Val Glu
1340	1345	1350
Val Val Leu Asp Lys Leu	His Gly Gln Val Leu	Ser Gln Glu Gln
1355	1360	1365
Tyr Glu Arg Val Leu Ala	Glu Asn Thr Arg Pro	Ser Gln Met Arg
1370	1375	1380
Lys Leu Phe Ser Leu Ser	Gln Ser Trp Asp Arg	Lys Cys Lys Asp
1385	1390	1395
Gly Leu Tyr Gln Ala Leu	Lys Glu Thr His Pro	His Leu Ile Met
1400	1405	1410
Glu Leu Trp Val Lys Gly	Ser Lys Lys Gly Leu	Leu Pro Leu Ser
1415	1420	1425

Ser

#210 - 4
 #211 - 103
 #212 - 187
 #213 - Hem. cap. lens

#480 - 4

Met Gly Phe Asn Leu Glu Ala Leu Leu Val Gln Leu Ser Gln Asn Val

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Leu Ser Lys Phe Lys Tyr Leu Ile Thr Thr Phe Ser Pro Ala His Glu	20	25	30
Leu Gln Lys Ile Pro His Lys Glu Val Asp Lys Ala Asp Gly Lys Gln	35	40	45
Leu Val Glu Ile Leu Thr Thr His Cys Asp Ser Tyr Trp Val Glu Met	50	55	60
Ala Ser Leu Gln Val Phe Glu Lys Met His Arg Met Asp Leu Ser Glu	65	70	75
Arg Ala Lys Asp Glu Val Arg Glu Ala Ala Leu Lys Ser Phe Asn Lys	80	85	90
Arg Lys Pro Leu Ser Leu Gly Ile Thr Arg Lys Glu Arg Pro Pro Leu	100	105	110
Asp Val Asp Glu Met Leu Glu Arg Phe Lys Thr Glu Ala Gln Asp Lys	115	120	125
Asp Asn Arg Cys Arg Tyr Ile Leu Lys Thr Lys Phe Arg Glu Met Trp	130	135	140
Lys Ser Trp Pro Gly Asp Ser Lys Glu Val Gln Val Met Ala Glu Arg	145	150	155
Tyr Lys Met Leu Ile Pro Phe Ser Asn Pro Arg Val Leu Pro Gly Pro	160	165	170
Phe Ser Tyr Thr Val Val Leu Tyr Gly Pro Ala Gly Leu Gly Lys Thr	175	180	185
Thr Leu Ala Gln Lys Leu Met Leu Asp Trp Ala Glu Asp Asn Leu Ile	190	195	200
His Lys Phe Lys Tyr Ala Phe Tyr Leu Ser Cys Arg Glu Leu Ser Arg	205	210	215
Leu Gly Pro Cys Ser Phe Ala Glu Leu Val Phe Arg Asp Trp Pro Glu	220	225	230
Leu Gln Asp Asp Ile Pro His Ile Leu Ala Gln Ala Arg Lys Ile Leu	235	240	245
Phe Val Ile Asp Gly Phe Asp Glu Leu Gly Ala Ala Pro Gly Ala Leu	250	255	260
Ile Glu Asp Ile Cys Gly Asp Trp Glu Lys Lys Lys Pro Val Pro Val	265	270	275
Leu Leu Gly Ser Leu Leu Asn Arg Val Met Leu Pro Lys Ala Ala Leu	280	285	290
Leu Val Thr Thr Arg Pro Arg Ala Leu Arg Asp Leu Arg Ile Leu Ala	295	300	305
Glu Glu Phe Ile Tyr Ile Ala Val Glu Gly Phe Leu Glu Gln Asp Lys	310	315	320

Arg Ala Tyr Phe Leu Arg His Phe Gly Asp Glu Asp Gln Ala Met Arg
 340 345 350
 Ala Phe Glu Leu Met Arg Ser Asn Ala Ala Leu Phe Gln Leu Gly Ser
 355 360 365
 Ala Pro Ala Val Cys Trp Ile Val Cys Thr Thr Leu Lys Leu Gln Met
 370 375 380
 Glu Lys Gly Glu Asp Pro Val Pro Thr Cys Leu Thr Arg Thr Gly Leu
 385 390 395 400
 Phe Leu Arg Phe Leu Cys Ser Arg Phe Pro Gln Gly Ala Gln Leu Arg
 405 410 415
 Gly Ala Leu Arg Thr Leu Ser Leu Leu Ala Ala Gln Gly Leu Trp Ala
 420 425 430
 Gln Thr Ser Val Leu His Arg Glu Asp Leu Glu Arg Leu Gly Val Gln
 435 440 445
 Glu Ser Asp Leu Arg Leu Phe Leu Asp Gly Asp Ile Leu Arg Gln Asp
 450 455 460
 Arg Val Ser Lys Gly Cys Tyr Ser Phe Ile His Leu Ser Phe Gln Gln
 465 470 475 480
 Phe Leu Thr Ala Leu Phe Tyr Thr Leu Glu Lys Glu Glu Glu Glu Asp
 485 490 495
 Arg Asp Gly His Thr Trp Asp Ile Gly Asp Val Gln Lys Leu Leu Ser
 500 505 510
 Gly Val Glu Arg Leu Arg Asn Pro Asp Leu Ile Gln Ala Gly Tyr Tyr
 515 520 525
 Ser Phe Gly Leu Ala Asn Glu Lys Arg Ala Lys Glu Leu Glu Ala Thr
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 +2125 -INA
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1115	1120		1125
Phe Cys Val Trp Asp Gln Ile Leu Gly Glu Ile Asn Pro Gln His			
1130	1135		1140
Ser Trp Met Val Ala Gly Phe Leu Leu Arg Ile Lys Ala Gln Phe			
1145	1150		1155
Gly Ala Val Glu Ala Val His Leu Pro His Phe Val Ala Leu Glu			
1160	1165		1170
Gly Gly His Val Asp Thr Ser Ile Phe Gln Met Ala His Phe Lys			
1175	1180		1185

Glu Glu Gly Met Leu Leu Glu	Lys Pro Ala Arg Val	Glu Leu His
1190	1195	1200
His Ile Val Leu Glu Asn Pro	Ser Phe Ser Pro Leu	Gly Val Leu
1205	1210	1215
Leu Lys Met Ile His Asn Ala	Leu Arg Phe Ile Pro	Val Thr Ser
1220	1225	1230
Val Val Leu Leu Tyr His Arg	Val His Pro Glu Glu	Val Thr Phe
1235	1240	1245
His Leu Tyr Leu Ile Pro Ser	Asp Cys Ser Ile Arg	Lys Glu Leu
1250	1255	1260
Glu Leu Cys Tyr Arg Ser Pro	Gly Glu Asp Gln Leu	Phe Ser Glu
1265	1270	1275
Phe Tyr Val Gly His Leu Gly	Ser Gly Ile Arg Leu	Gln Val Lys
1280	1285	1290
Asp Lys Lys Asp Glu Thr Leu	Val Trp Glu Ala Leu	Val Lys Pro
1295	1300	1305
Gly Asp Leu Met Pro Ala Thr	Thr Leu Ile Pro Pro	Ala Arg Ile
1310	1315	1320
Ala Val Pro Ser Pro Leu Asp	Ala Pro Gln Leu Leu	His Phe Val
1325	1330	1335
Asp Gln Tyr Arg Glu Gln Leu	Ile Ala Arg Val Thr	Ser Val Glu
1340	1345	1350
Val Val Leu Asp Lys Leu His	Gly Gln Val Leu Ser	Gln Glu Gln
1355	1360	1365
Tyr Glu Arg Val Leu Ala Glu	Asn Thr Arg Pro Ser	Gln Met Arg
1370	1375	1380
Lys Leu Phe Ser Leu Ser Gln	Ser Trp Asp Arg Lys	Cys Lys Asp
1385	1390	1395
Gly Leu Tyr Gln Ala Leu Lys	Glu Thr His Pr	His Leu Ile Met
1400	1405	1410
Glu Leu Trp Glu Lys Gly Ser	Lys Lys Gly Leu Leu	Pro Leu Ser
1415	1420	1425

Per

(210) 27

(211) "

(212) FRT

(213) (Bacteriophage T7)

(400) 27

Asp Tyr Lys Asp Arg Arg Arg Lys

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